

## MAGNA REFLEX HOLDING GMBH

## Patent Claims

- 5 1. Vehicle rear vision system (1) with at least one  
rearview mirror unit provided with an electro-  
chromic mirror (2), with a control device as  
well as a vehicle power supply device, the con-  
10 trol device being electrically connected for its  
power supply to the vehicle power supply device  
and to the electrochromic mirror in order to  
control the reflection properties of said mirror  
in dependence on a control voltage and to a  
15 sheet-type heating resistor,  
characterised in that  
the control device has the sheet-type heating  
resistor (3) as dissipating resistor to carry  
away the electrical dissipation loss resulting  
20 from the generation of the control voltage as  
heat.
2. Vehicle rear vision system according to claim 1,  
characterised in that the control voltage is  
less than 25% of the vehicle's voltage.
- 25 3. Vehicle rear vision system according to one of  
the preceding claims, characterised in that the  
rearview mirror unit is embodied as an interior  
mirror unit (4) or an exterior mirror unit (5).
- 30 4. Vehicle rear vision system according to claim 3,  
characterised in that both the interior (4)  
and/or exterior mirror unit (5) have electro-  
chromic mirrors (2) which are respectively con-  
nected to the control device.
- 35 5. Vehicle rear vision system according to claim 3,  
characterised in that parts of the control de-  
vice are accommodated in the housing (9) of the

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interior (4) or exterior mirror unit (5).

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6. Vehicle rear vision system according to one of the preceding claims, characterised in that the heating resistor (3) is applied as a coating to a carrier material.
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7. Vehicle rear vision system according to claim 6, characterised in that the carrier material is the non-reflective rear side (2a) of the mirror (2) of the rearview mirror unit, a flat electrical line or a foil.
8. Vehicle rear vision system according to claim 6, characterised in that the coating is made of copper, silver or aluminium.
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9. Vehicle rear vision system according to Claim 7, characterised in that the heating resistor (3) is disposed in meander shape on the carrier material (2).
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10. Vehicle rear vision system according to claim 9, characterised in that, on the same carrier material as that on which the heating resistor (3) is disposed in meander shape, there is disposed a mirror glass heating system (6) is disposed belonging to the rearview mirror unit.
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11. Rear vision system according to one of the preceding claims, characterised in that the heating resistor (3) is connected to the electrochromic mirror (2) either as part of the material of same or as a form-fit.
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12. Vehicle rear vision system according to one of the preceding claims, characterised in that the mirror is disposed on a glass support plate (7)

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5 belonging to the rearview mirror unit, which plate is orientated towards the non-reflective rear side of the mirror, and the heating resistor (3) as well as further elements of the control device are disposed between the mirror and the glass support plate.

10 13. Vehicle rear vision system according to one of the preceding claims, characterised in that elements of the control device are arranged in a glass adjustment drive (8) belonging to the rearview mirror unit.

14. Vehicle rear vision system according to one of the preceding claims, characterised in that the control device contains an integrated circuit.

15 15. Vehicle rear vision system according to claim 14, characterised in that the integrated circuit is applied directly to a foil.

20 16. Vehicle rearview system according to one of the preceding claims, characterised in that the control device has at least one light sensor (10, 11) disposed preferably in the region of incident light of an electrochromic mirror, and which generates a control signal to generate a control voltage in dependence on the incident light flux.

25 17. Vehicle rear vision system according to one of the preceding claims, characterised in that the control device has a unit for the pulse-width modulation (12) of a control signal with a signal level, preferably at the level of the vehicle's voltage, and the unit for the pulse-width modulation is connected to a transformer (14), belonging to the control device, for converting

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the pulse-width modulated signal (13) into an analog control voltage.

- 5 18. Vehicle rear vision system according to one of the preceding claims, characterised in that the control device has an analog-digital converter (15) for the digitization of a control signal and the analog-digital converter is connected via a data bus to a digital-analog converter in order to convert the digital signal into an analog control voltage.
- 10 19. Vehicle rear vision system according to claim 18, characterised in that the data bus protocol is based on a UART or CAN system.
- 15 20. Vehicle rear vision system according to one of the preceding claims, characterised in that the heating resistor (3) is connected in series to a parallel connection consisting of at least one electrochromic mirror (2) and a transistor.
- 20 21. Vehicle rear vision system according to one of claims 1 - 19, characterised in that the heating resistor (3) is connected in series to an electrochromic mirror (2) and to a transistor (17) placed in series to same.
- 25 22. Vehicle rear vision system according to one of the preceding claims, characterised in that the electrical connections within the control device and/or between the control device and electrochromic mirrors are realised as foil printed circuits.
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